

CONVERSION CHART

VELOCITY PRESSURE in inches of water to VELOCITY in feet per minute



Calculating Air Velocity. Fechheimer Pitot airflow stations and traverse probes measure in the same manner and magnitude as the Pitot tube, via separate signals of airstream total pressure and static pressure in inches water column (in. WC). To obtain velocity pressure (the force generated by the velocity of the air moving in a duct), the static pressure must be subtracted from the total pressure:

$$\text{Velocity Pressure (in. WC)} = \text{Total Pressure (in. WC)} - \text{Static Pressure (in. WC)}$$

Air velocity, expressed in feet per minute (FPM), is a function of velocity pressure, converted by means of the following formula:

$$\text{Air Velocity (FPM)} = 1096.5 \times \sqrt{\frac{\text{Velocity Pressure (in. WC)}}{\text{Density of (Gas)}}}$$

In commercial applications where air is the gas, its density is at 70° Fahrenheit and 29.92 inches of mercury (barometric pressure), and the airflow is not compressed (under 10 in. WC), the formula reduces to:

$$\text{Air Velocity (FPM)} = 4005 \times \sqrt{\text{Velocity Pressure (in. WC)}}$$

VP	V	VP	V	VP	V	VP	V	VP	V	VP	V	VP	V
.001"	127	.032"	716	.063"	1004	.094"	1228	.125"	1416	.156"	1582	.187"	1732
.002"	179	.033"	727	.064"	1012	.095"	1234	.126"	1422	.157"	1587	.188"	1737
.003"	219	.034"	738	.065"	1020	.096"	1241	.127"	1427	.158"	1592	.189"	1741
.004"	253	.035"	749	.066"	1029	.097"	1247	.128"	1433	.159"	1597	.190"	1746
.005"	283	.036"	759	.067"	1037	.098"	1254	.129"	1439	.160"	1602	.191"	1750
.006"	310	.037"	770	.068"	1045	.099"	1260	.130"	1444	.161"	1607	.192"	1755
.007"	335	.038"	780	.069"	1052	.100"	1266	.131"	1449	.162"	1612	.193"	1759
.008"	358	.039"	791	.070"	1060	.101"	1273	.132"	1455	.163"	1617	.194"	1764
.009"	380	.040"	801	.071"	1067	.102"	1279	.133"	1461	.164"	1622	.195"	1768
.010"	400	.041"	811	.072"	1075	.103"	1285	.134"	1466	.165"	1627	.196"	1773
.011"	420	.042"	821	.073"	1082	.104"	1292	.135"	1471	.166"	1632	.197"	1777
.012"	439	.043"	831	.074"	1089	.105"	1298	.136"	1477	.167"	1637	.198"	1782
.013"	457	.044"	840	.075"	1097	.106"	1304	.137"	1482	.168"	1642	.199"	1787
.014"	474	.045"	849	.076"	1104	.107"	1310	.138"	1488	.169"	1646	.200"	1791
.015"	491	.046"	859	.077"	1111	.108"	1316	.139"	1493	.170"	1651	.201"	1795
.016"	507	.047"	868	.078"	1119	.109"	1322	.140"	1498	.171"	1656	.202"	1800
.017"	522	.048"	877	.079"	1125	.110"	1328	.141"	1504	.172"	1661	.203"	1804
.018"	537	.049"	887	.080"	1133	.111"	1334	.142"	1509	.173"	1666	.204"	1809
.019"	552	.050"	896	.081"	1140	.112"	1340	.143"	1515	.174"	1670	.205"	1813
.020"	566	.051"	904	.082"	1147	.113"	1346	.144"	1520	.175"	1675	.206"	1818
.021"	580	.052"	913	.083"	1154	.114"	1352	.145"	1525	.176"	1680	.207"	1822
.022"	594	.053"	922	.084"	1161	.115"	1358	.146"	1530	.177"	1685	.208"	1827
.023"	607	.054"	931	.085"	1167	.116"	1364	.147"	1536	.178"	1690	.209"	1831
.024"	620	.055"	939	.086"	1175	.117"	1370	.148"	1541	.179"	1695	.210"	1835
.025"	633	.056"	948	.087"	1181	.118"	1376	.149"	1546	.180"	1699	.211"	1839
.026"	645	.057"	956	.088"	1188	.119"	1382	.150"	1551	.181"	1704	.212"	1844
.027"	658	.058"	964	.089"	1193	.120"	1387	.151"	1556	.182"	1709	.213"	1848
.028"	670	.059"	973	.090"	1201	.121"	1393	.152"	1561	.183"	1713	.214"	1853
.029"	682	.060"	981	.091"	1208	.122"	1399	.153"	1567	.184"	1718	.215"	1857
.030"	694	.061"	989	.092"	1215	.123"	1404	.154"	1572	.185"	1723	.216"	1862
.031"	705	.062"	996	.093"	1222	.124"	1410	.155"	1577	.186"	1727	.217"	1866

VP	V	VP	V	VP	V	VP	V	VP	V	VP	V	VP	V
.218"	1870	.266"	2066	.314"	2242	.362"	2410	.59"	3076	1.07"	4142	1.55"	4986
.219"	1875	.267"	2070	.315"	2245	.363"	2413	.60"	3102	1.08"	4162	1.56"	5002
.220"	1879	.268"	2074	.316"	2248	.364"	2416	.61"	3127	1.09"	4181	1.57"	5018
.221"	1883	.269"	2078	.317"	2251	.365"	2420	.62"	3153	1.10"	4200	1.58"	5034
.222"	1887	.270"	2081	.318"	2254	.366"	2423	.63"	3179	1.11"	4219	1.59"	5050
.223"	1892	.271"	2085	.319"	2257	.367"	2426	.64"	3204	1.12"	4238	1.60"	5066
.224"	1896	.272"	2089	.320"	2260	.368"	2429	.65"	3229	1.13"	4257	1.61"	5082
.225"	1900	.273"	2093	.321"	2264	.369"	2433	.66"	3254	1.14"	4276	1.62"	5098
.226"	1905	.274"	2097	.322"	2268	.370"	2436	.67"	3279	1.15"	4295	1.63"	5114
.227"	1909	.275"	2101	.323"	2272	.371"	2439	.68"	3303	1.16"	4314	1.64"	5129
.228"	1913	.276"	2105	.324"	2276	.372"	2443	.69"	3327	1.17"	4332	1.65"	5144
.229"	1917	.277"	2109	.325"	2280	.373"	2445	.70"	3351	1.18"	4350	1.66"	5160
.230"	1921	.278"	2113	.326"	2284	.374"	2449	.71"	3375	1.19"	4368	1.67"	5175
.231"	1925	.279"	2116	.327"	2289	.375"	2453	.72"	3398	1.20"	4386	1.68"	5191
.232"	1929	.280"	2119	.328"	2293	.376"	2456	.73"	3422	1.21"	4405	1.69"	5206
.233"	1933	.281"	2123	.329"	2297	.377"	2459	.74"	3445	1.22"	4423	1.70"	5222
.234"	1937	.282"	2127	.330"	2301	.378"	2462	.75"	3468	1.23"	4442	1.71"	5237
.235"	1941	.283"	2131	.331"	2304	.379"	2466	.76"	3491	1.24"	4460	1.72"	5253
.236"	1945	.284"	2135	.332"	2308	.380"	2469	.77"	3514	1.25"	4478	1.73"	5268
.237"	1950	.285"	2139	.333"	2311	.381"	2472	.78"	3537	1.26"	4495	1.74"	5283
.238"	1954	.286"	2143	.334"	2315	.382"	2475	.79"	3560	1.27"	4513	1.75"	5298
.239"	1958	.287"	2147	.335"	2318	.383"	2479	.80"	3582	1.28"	4531	1.76"	5313
.240"	1962	.288"	2151	.336"	2322	.384"	2481	.81"	3604	1.29"	4549	1.77"	5328
.241"	1966	.289"	2154	.337"	2325	.385"	2485	.82"	3625	1.30"	4566	1.78"	5343
.242"	1970	.290"	2157	.338"	2329	.386"	2488	.83"	3657	1.31"	4583	1.79"	5359
.243"	1974	.291"	2161	.339"	2332	.387"	2491	.84"	3669	1.32"	4601	1.80"	5374
.244"	1978	.292"	2164	.340"	2335	.388"	2495	.85"	3690	1.33"	4619	1.81"	5388
.245"	1982	.293"	2168	.341"	2338	.389"	2499	.86"	3709	1.34"	4636	1.82"	5403
.246"	1987	.294"	2171	.342"	2342	.390"	2501	.87"	3729	1.35"	4653	1.83"	5418
.247"	1991	.295"	2175	.343"	2345	.400"	2533	.88"	3758	1.36"	4671	1.84"	5433
.248"	1995	.296"	2179	.344"	2349	.410"	2563	.89"	3779	1.37"	4688	1.85"	5447
.249"	1999	.297"	2182	.345"	2352	.420"	2595	.90"	3800	1.38"	4705	1.86"	5462
.250"	2003	.298"	2186	.346"	2356	.430"	2626	.91"	3821	1.39"	4722	1.87"	5477
.251"	2007	.299"	2189	.347"	2360	.440"	2656	.92"	3842	1.40"	4739	1.88"	5491
.252"	2011	.300"	2193	.348"	2363	.450"	2687	.93"	3863	1.41"	4756	1.89"	5506
.253"	2015	.301"	2197	.349"	2366	.460"	2716	.94"	3884	1.42"	4773	1.90"	5521
.254"	2019	.302"	2200	.350"	2369	.470"	2746	.95"	3904	1.43"	4790	1.91"	5535
.255"	2023	.303"	2204	.351"	2372	.480"	2775	.96"	3924	1.44"	4806	1.92"	5550
.256"	2027	.304"	2208	.352"	2376	.490"	2804	.97"	3945	1.45"	4823	1.93"	5564
.257"	2031	.305"	2212	.353"	2379	.500"	2832	.98"	3965	1.46"	4840	1.94"	5579
.258"	2035	.306"	2215	.354"	2383	.51"	2860	.99"	3985	1.47"	4856	1.95"	5593
.259"	2039	.307"	2219	.355"	2386	.52"	2888	1.00"	4005	1.48"	4873	1.96"	5608
.260"	2042	.308"	2223	.356"	2389	.53"	2916	1.01"	4025	1.49"	4889	1.97"	5623
.261"	2046	.309"	2226	.357"	2393	.54"	2943	1.02"	4045	1.50"	4905	1.98"	5623
.262"	2050	.310"	2230	.358"	2396	.55"	2970	1.03"	4064	1.51"	4921	1.99"	5651
.263"	2054	.311"	2233	.359"	2400	.56"	2997	1.04"	4084	1.52"	4938	2.00"	5664
.264"	2058	.312"	2236	.360"	2403	.57"	3024	1.05"	4103	1.53"	4954		
.265"	2062	.313"	2239	.361"	2406	.58"	3050	1.06"	4123	1.54"	4970		